

What is claimed is:

1. A method of printing N copies of a print image, where N is an integer equal to or larger than 2, on a print medium side by side in a direction along an X axis of the print medium, assuming that two axes orthogonal to each other on a two-dimensional rectangular coordinate system are set to the X axis and a Y axis, the print image being formed of J dots in the direction along the X axis by K dots in a direction along the Y axis, where J is an integer equal to or larger than 2 and K is an integer equal to or larger than 2,

the method comprising the steps of:

sequentially receiving line data items of print image data representing the print image, each representing one line of the J dots arranged in the direction along the X axis, according to a predetermined communication protocol from a predetermined other end of communication, thereby sequentially receiving K line data items corresponding to K lines in the direction along the Y axis;

setting a k-th line data item (k is an arbitrary integer defined as $1 \leq k \leq K$) of the K line data items to a k-th short line data item when the k-th line data item is received, and sequentially arranging N copies of the k-th short line data item side by side to form a k-th long line data item representing one line of N times J dots formed by arranging N lines of the J dots in the direction along the X axis; and

printing the one line of N times J dots represented by the k-th long line data item, as a k-th line on the print medium in the direction along the X

axis thereof.

2. A method according to claim 1, further including the step of specifying the integer N which is a number of copies of the print image.

3. A method according to claim 1, further including the step of receiving print number data indicative of the integer N which is a number of copies of the print image.

4. A method according to claim 1, wherein a predetermined printable dot number M which is a number of dots printable in the direction along the X axis is determined based on the k-th long line data item,

the method further including the step of determining the integer N which is a number of copies of the print image, based on the integer J which is a number of dots of the print image in the direction along the X axis and the predetermined printable dot number M.

5. A method according to claim 1, wherein a predetermined printable length L within which printing can be carried out in the direction along the X axis is determined based on the k-th long line data item,

the method further including the step of determining the integer N which is a number of copies of the print image, based on the integer J which is a number of dots of the print image in the direction along the X axis, a print density, and the predetermined printable length L.

6. A method according to claim 5, further including the step of specifying the print density.

7. A method according to claim 5, further including the step of receiving print density data indicative of the print density.

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8. A method according to claim 4, further including the step of detecting the integer J, based on received line data.

9. A method according to claim 4, further including the step of receiving dot number data indicative of the integer J.

10. A method according to claim 1, wherein the print medium is in a continuous form and mounted such that a direction of length thereof coincides with the direction along the X axis.

11. A method according to claim 1, further comprising the steps of:

forming the print image data; and

sequentially transmitting the K line data items of the formed print image data via a first interface, wherein the step of sequentially receiving the K line data items corresponding to the K lines in the direction along the Y axis includes receiving the K line data items via the first interface.

12. A method according to claim 11, wherein the first interface enables communication in conformity to an interface standard of RS-232C, USB, or IEEE1394.

13. A method according to claim 11, wherein the first interface enables communication in conformity to the Centronics standard.

14. A method according to claim 11, wherein the step of sequentially transmitting the K line data items via the first interface includes the steps of:

transmitting the print image data via a second interface;

receiving the print image data via the second interface and dividing the print image data into the K line data items; and

sequentially transmitting the divided K line data items one by one via the first interface.

15. A method according to claim 14, wherein the second interface enables communication via a predetermined network.

16. A method according to claim 15, wherein the predetermined network includes the Internet.

17. A method according to claim 15, wherein the predetermined network includes a predetermined local area network.

18. A method according to claim 14, wherein the second interface enables communication in conformity to an IEEE standard LAN-based communication protocol.

19. A method according to claim 14, wherein the second interface enables communication in conformity to at least one of data link protocols of Ethernet, FDDI, and ATM.

20. A method of producing a label by using a printed image formed by printing N copies of a print image, where N is an integer equal to or larger than 2, on a print medium side by side in a direction along an X axis of the print medium, assuming that two axes orthogonal to each other on a two-dimensional rectangular coordinate system are set to the X axis and a Y axis, the print image being formed of J dots in the direction along the X axis by K dots in a direction along the Y axis, where J is an integer equal to or larger than 2 and K is an integer equal to or larger than 2,

the method comprising the steps of:

sequentially receiving line data items of print image data representing the print image, each representing one line of the J dots arranged in the

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23. An image printing apparatus for printing N copies of a print image, where N is an integer equal to or larger than 2, on a print medium side by side in a

direction along an X axis of the print medium, assuming that two axes orthogonal to each other on a two-dimensional rectangular coordinate system are set to the X axis and a Y axis, the print image being formed of J dots in the direction along the X axis by K dots in a direction along the Y axis, where J is an integer equal to or larger than 2 and K is an integer equal to or larger than 2,

the image printing apparatus comprising:

line data-receiving means for sequentially receiving line data items of print image data representing the print image, each representing one line of the J dots arranged in the direction along the X axis, according to a predetermined communication protocol from a predetermined other end of communication, thereby sequentially receiving K line data items corresponding to K lines in the direction along the Y axis;

long line data-forming means for setting a k-th line data item (k is an arbitrary integer defined as $1 \leq k \leq K$) of the K line data items to a k-th short line data item when the k-th line data item is received, and sequentially arranging N copies of the k-th short line data item side by side to form a k-th long line data item representing one line of N times J dots formed by arranging N lines of the J dots in the direction along the X axis; and

line printing means for printing the one line of N times J dots represented by the k-th long line data item, as a k-th line on the print medium in the direction along the X axis thereof.

24. An image printing apparatus according to claim 23, further including print number-specifying

means for specifying the integer N which is a number of copies of the print image.

25. An image printing apparatus according to claim 23, further including print number data-receiving means for receiving print number data indicative of the integer N which is a number of copies of the print image.

26. An image printing apparatus according to claim 23, wherein a predetermined printable dot number M which is a number of dots printable in the direction along the X axis is determined based on the k-th long line data item,

the method further including the step of determining the integer N which is a number of copies of the print image, based on the integer J which is a number of dots of the print image in the direction along the X axis and the predetermined printable dot number M.

27. An image printing apparatus according to claim 23, wherein a predetermined printable length L within which printing can be carried out in the direction along the X axis is determined based on the k-th long line data item,

the image printing apparatus further including print number-determining means for determining the integer N which is a number of copies of the print image, based on the integer J which is a number of dots of the print image in the direction along the X axis, a print density, and the predetermined printable length L.

28. An image printing apparatus according to claim 27, further including print density-specifying means for specifying the print density.

29. An image printing apparatus according to

30. An image printing apparatus according to claim 26, further including dot number-detecting means for detecting the integer J, based on received line data.

32. An image printing apparatus according to claim 23, wherein the print medium is in a continuous form and mounted such that a direction of length thereof coincides with the direction along the X axis.

33. An image printing system comprising:
an image printing apparatus for printing N copies of a print image, where N is an integer equal to or larger than 2, on a print medium side by side in a direction along an X axis of the print medium, assuming that two axes orthogonal to each other on a two-dimensional rectangular coordinate system are set to the X axis and a Y axis, the print image being formed of J dots in the direction along the X axis by K dots in a direction along the Y axis, where J is an integer equal to or larger than 2 and K is an integer equal to or larger than 2, the image printing apparatus including line data-receiving means for sequentially receiving line data items of print image data representing the print image, each representing one line of the J dots arranged in the direction along the X axis, according to a predetermined communication protocol from a predetermined other end of


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print image data-forming means for forming the
print image data; and
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wherein the line data-receiving means receives the K line data items via the first interface.

35. An image printing system according to claim 33, wherein the first interface enables communication in conformity to the Centronics standard.

image data-transmitting means for transmitting

data dividing means for receiving the print image data via the second interface and dividing the print image data into the K line data items; and

37. An image printing system according to claim 36, wherein the second interface enables communication via a predetermined network.

39. An image printing system according to claim 37, wherein the predetermined network includes a predetermined local area network.

41. An image printing system according to claim 36, wherein the second interface enables communication in conformity to at least one of data link protocols of Ethernet, FDDI, and ATM.

42. A label producing system for producing a label by using a printed image formed by printing N copies of a print image, where N is an integer equal to or larger than 2, on a print medium side by side in a direction along an X axis of the print medium, assuming that two axes orthogonal to each other on a two-dimensional rectangular coordinate system are set to the X axis and a Y axis, the print image being formed of J dots in the direction along the X axis by K dots

in a direction along the Y axis, where J is an integer equal to or larger than 2 and K is an integer equal to or larger than 2,

the label producing system comprising:

line data-receiving means for sequentially receiving line data items of print image data representing the print image, each representing one line of the J dots arranged in the direction along the X axis, according to a predetermined communication protocol from a predetermined other end of communication, thereby sequentially receiving K line data items corresponding to K lines in the direction along the Y axis;

long line data-forming means for setting a k-th line data item (k is an arbitrary integer defined as $1 \leq k \leq K$) of the K line data items to a k-th short line data item when the k-th line data item is received, and sequentially arranging N copies of the k-th short line data item side by side to form a k-th long line data item representing one line of N times J dots formed by arranging N lines of the J dots in the direction along the X axis;

line printing means for printing the one line of N times J dots represented by the k-th long line data item, as a k-th line on the print medium in the direction along the X axis thereof; and

label producing means for producing labels each having the print image printed thereon by using each of portions of the print medium on which the N copies of the print image are printed, respectively.

43. A label producing system according to claim 42, wherein said label producing means includes cutting means for cutting off the portions of the print medium

